

Bonneville Power Administration

Conservation & Renewables Discount Program

Second Interim  
Report to the Region  
for  
Fiscal Years 2001, 2002, 2003, & 2004

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January 21, 2005

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## **SECTION 1 -- Historical Perspective**

In December 1996, the Steering Committee for the Governors' Comprehensive Regional Review issued a set of recommendations that suggested maximum local control in implementing cost-effective conservation, renewables and low-income energy services, while ensuring stable funding.<sup>1</sup> The Steering Committee further recommended that 3 percent of regional electricity sales revenues be dedicated to these purposes through July 2007.

Another recommendation was to establish a Regional Technical Forum (RTF) to develop standardized protocols for verification and evaluation of energy savings, to track regional progress toward the achievement of the region's conservation and renewable resource goals, and to provide feedback for improving the effectiveness of conservation and renewable resource development programs in the region. The RTF was established in April 1999.

The idea for a C&RD surfaced as part of the BPA subscription process in September 1998. A major goal of subscription was to provide market incentives for the development of conservation and renewables. Building the C&RD into the 5-year rate structure protects the credits from the volatility of the budgeting process and gives utility conservation managers the ability to plan consistent programs and hire staff. C&RD was approved in May 2000, and launched in early 2001, 8 months ahead of the planned starting date, due to the 2000/2001 Energy Crisis.

The C&RD was designed to create incremental efficiency gains and renewable energy supplies, and to provide incentives to continue the region's progress in low-income weatherization programs. C&RD also promotes local control and management of conservation and renewable programs.

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<sup>1</sup> Comprehensive Review of the Northwest Energy System Final Report, page 7, December 12, 1996.

## **SECTION 2 -- Program Overview**

The C&RD credit is a 0.5 mill discount off the BPA firm power rate. The amount of each customer's C&RD discount is determined by multiplying 0.5 mills times the amount of subscription load placed on BPA. Thus, the total annual credit approximates \$37 million with an expected total credit for the 2002 - 2006 rate period of \$185 million.<sup>2</sup>

A credit is earned from the installation of conservation measures or by making other qualifying expenditures for renewable energy, qualified research projects, or through donations to qualifying organizations. At the end of the rate period, customers pay BPA for any C&RD credits not accounted for. Customer utilities submit annual reports detailing installation of approved conservation measures or renewable-resource related activities. The credit may be spent at any time during the rate period.

The RTF provides a central forum for discussion of technical issues around savings and credits for the C&RD. The RTF developed an accessible web-site tracking and calculation system that has been almost universally accepted as a method for reporting C&RD conservation credits to BPA.

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<sup>2</sup> The actual total C&RD credit available over the rate period will be based upon the actual loads placed on BPA. Current projections of the total credit available for the 2002-2006 rate period are \$174 million or about \$35 million per year over the 5-year rate period.

## SECTION 3 -- C&RD Credits Claimed by Participating Customers

Seventy-nine BPA customers provide individual reports annually to claim C&RD credits. The Pacific Northwest Generating Cooperative (PNGC) submits one report for its 15 member utilities and the Idaho Energy Authority Pooling Group (IDEAs Group) submits one report for eight customers. Thirty-one of BPA's customers with purchases under 7.5 aMWs are not required to submit a report.

Tables 1 through 3, below, show C&RD spending patterns from BPA fiscal year 2001 – 2004.<sup>3</sup> Table 1 summarizes the credit available, the credits claimed and the credits remaining. Table 2 summarizes savings and claims by conservation sector and activity. Table 3 provides more detailed information on donation and Table 4 lists renewable claims by type.

- \$18.9 million has been spent on renewable resource initiatives, which average \$6.3 million annually. BPA guaranteed \$6 million per year would be spent on renewable resource related activities. Table 1 shows more detail.

**Table 1 – Rate Credit Summary Table**

	-- FYO1 --	-- FYO2 --	-- FYO3 --	-- FYO4 --	-- FYO5 --	-- FYO6 --	-- Total --
<b>Credit Available</b>	\$0	\$35,434,984	\$34,799,742	\$34,721,268	\$34,655,292	\$34,655,292	\$174,266,578
<b>Admin Claimed</b>	\$0	\$4,522,773	\$4,875,128	\$3,966,615	\$0	\$0	\$13,364,516
<b>Total Activity Reported</b>	\$9,172,407	\$41,256,291	\$45,379,757	\$32,025,671	\$0	\$0	\$127,834,126
<b>Credit Used*</b>	\$9,172,407	\$45,779,064	\$50,254,885	\$35,992,286	\$0	\$0	\$141,198,642
<b>Cumulative Balance</b>	(\$9,172,407)	(\$19,516,487)	(\$34,971,630)	(\$36,242,648)	(\$1,587,356)	\$33,067,936	\$33,067,936

\*Credit Used is subtracted from Credit Available to obtain the Cumulative Balance.

- 18 customers claimed their entire credit; an additional 16 customers have claimed at least 80 percent of their credit.
- Conservation measures account for 68 percent of the credits claimed, resulting in approximately 54 aMWs of conservation savings.
- In general, reported conservation claims are starting to drop off. In FY2002, 18.5 aMW were reported at a cost of \$32 million. In FY2003, 17.8 aMW were reported at a cost of \$33 million. However, in FY2004, reported conservation savings dropped to 13.4 aMW at a cost of \$23 million.
- About \$63.7 million has been claimed for residential sector measures, producing 31.9 aMWs of energy conservation. Reported residential energy savings and C&RD credits claimed for FY2004 are close to those reported in FY2003 (FY2003 8.4 aMW, \$18 million; FY2004 7.5 aMW, \$16.3 million). However, neither FY 2003 nor FY2004 matched the success of FY2002 (12.5 aMW, \$23.3 million) when the region was aggressively promoting Compact Fluorescent Light (CFL) bulbs.
- The commercial and industrial sectors showed dramatic increases in FY 2003 from the FY 2001 and 2002 totals. FY2004 showed a dramatic drop in the C&RD credits claimed, with energy savings dropping only slightly. In FY2003, 5.2 aMW of commercial and industrial savings were reported and \$9.7 million in C&RD credits were claimed. In FY2004, 4.6 aMW of commercial and industrial savings were

<sup>3</sup> Summaries based on data from the C&RD reporting system as of December 27, 2004.

reported and \$5.4 million in C&RD credits were claimed. This change is most likely the result of the change in program rules, that took place in FY2004, which limited C&RD claims for industrial and commercial projects with annual energy savings of more than 100,000 kWh to incremental project costs associated with installed energy conservation measures.

**Table 2 - FY2004 C&RD Report (as of 12-27-04)**

	FY01		FY02		FY03		FY04		FY01, FY02, FY03 & FY04	
	Savings (aMW)	\$	Savings (aMW)	\$	Savings (aMW)	\$	Savings (aMW)	\$	Savings (aMW)	Total \$
Residential	3.538	6,012,019	12.498	23,306,927	8.370	18,030,405	7.504	16,363,253	31.910	63,712,604
Commercial	0.342	693,513	1.745	2,722,520	3.896	7,226,121	3.160	3,814,121	9.143	14,456,275
Industrial	0.442	105,154	0.680	1,583,202	1.431	2,517,343	1.443	1,583,057	3.995	5,788,756
Agricultural <sup>1</sup>	0.261	315,912	0.363	485,897	0.334	447,004	0.222	287,755	1.181	1,536,568
Utility System	0	0	0.109	39,769	0.218	493,207	0.162	202,202	0.489	735,178
Other <sup>2</sup>	0.007	1,574	0.160	222,550	0.218	485,197	0.053	145,922	0.438	855,243
NEEA/ETO <sup>3</sup>	0.042	45,133	2.960	3,695,197	3.370	4,102,061	0.903	961,701	7.275	8,804,092
<b>Conservation Total</b>	<b>4.633</b>	<b>\$7,173,305</b>	<b>18.515</b>	<b>\$32,056,062</b>	<b>17.837</b>	<b>\$33,301,338</b>	<b>13.447</b>	<b>\$23,358,011</b>	<b>54.431</b>	<b>\$95,888,716</b>
Administration		0		4,019,249		4,374,099		3,450,375	-	11,843,723
Admin - Small Utils <sup>4</sup>		0		503,524		501,029		516,240	-	1,520,793
Low Income Wx <sup>5</sup>	0.014	922,098	0.209	3,004,274	0.192	3,104,291	0.193	3,321,957	0.608	10,352,620
Donations <sup>6</sup>		28,897		172,501		204,339		334,923		740,660
RD&D Projects		0		67,910		35,467		44,337	-	147,714
Renewables <sup>7</sup>		81,482	0.006	5,627,096	0.007	8,484,322	0.041	4,746,731	0.055	18,939,631
Irrigation Scheduling		966,625		328,448		250,000		229,812		1,774,885
<b>Grand Total</b>		<b>\$9,172,407</b>		<b>\$45,779,064</b>		<b>\$50,254,885</b>		<b>\$36,002,386</b>		<b>\$141,208,742</b>

**Notes**

1 - Energy saving in the Agriculture sector does not include energy savings from Irrigation Water Management.

2 - Other includes measures such as street lighting, Vending Miser, and LED traffic lights.

3 - Proxies were used to account for energy savings from Northwest Energy Efficiency Alliance activities in FY01-FY04 and Energy Trust of Oregon activities in FY02-FY03. Energy savings and \$ claimed are listed in Table3 below. The \$ listed for ETO, have not actually been claimed, but were added to this report to account for the energy saving being used as a proxy for their activity. PGE/ETO will submit reports for FY02 and FY03 activities in the near future, removing the need to use a proxy to report their activity.

4 - Small utility adm. accounts for C&RD for those utilities that have 7.5 aMW of Net Requirements Load (\$32,850 or less).

5 - Energy savings attributed to Low-Income Wx are where utilities claim C&RD credits by measure. These energy savings are not included in the Conservation Total above. Where utilities claimed credit for donations to US DOE weatherization subgrantees, energy savings were not reported.

6 - The donations reported here do not include Low-Income Wx, or NEEA.

7 - Energy savings reported are for Direct Application Renewables only (i.e., Photovoltaic and Solar Water Heating). Energy savings reported here are not included in the Conservation Totals listed above.

- Donations increased steadily from \$1.01 million in FY 2001 to over \$6.4 million in FY 2003. The Northwest Energy Efficiency Alliance (NEEA), the largest donation category in FY2003, dropped dramatically in FY2004. Donations to the US DOE Low-Income Weatherization subgrantees and donations in the "Limited" category remained about the same.

**Table 3 – C&RD Donations**

Donations	FY01	FY02	FY03	FY04	Total
<b>Unlimited</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
U.S. DOE Sub grantee Weatherization	851,474	1,624,985	1,782,818	2,124,975	6,384,252
NEEA	45,133	1,548,997	1,955,861	961,701	4,511,692
BEF	0	0	61,253	0	61,253
ETO	--	2,146,200	2,146,200	0	4,292,400
RTF	0	0	0	130,000	130,000
<b>Limited</b>	<b>28,897</b>	<b>172,501</b>	<b>204,339</b>	<b>204,923</b>	<b>610,660</b>
<b>Donations Total</b>	<b>\$1,016,653</b>	<b>\$5,547,681</b>	<b>\$6,423,987</b>	<b>\$3,421,599</b>	<b>\$16,409,920</b>

- \$18.9 million has been spent on renewable resource initiatives, which averages \$6.3 million annually. (BPA guaranteed \$6 million per year would be spent).  
“Facilities – Claim Production” and “Facilities – Claim Purchase” are both claims for large wind resources.

**Table 4 - Renewables**

	FY01	FY02	FY03	FY04	Total
<b>Renewables</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
Donations (BEF, Last Mile, Solar Rad. Lab)	81,149	55,000	307,060	450,636	893,845
Direct Application (PV & SDWH)	0	20,438	24,852	140,439	185,729
EPP (BPA)	0	1,680,293	1,374,138	1,141,307	4,195,738
Blended Products (BPA)	0	18,394	18,744	23,058	60,196
Facilities – Claim Production	333	21,308	3,541,019	1,212	3,563,872
Facilities – Claim Purchase	0	3,831,663	3,157,257	2,990,079	9,978,999
<b>Renewables Total</b>	<b>\$91,482</b>	<b>\$5,627,096</b>	<b>\$8,182,340</b>	<b>\$4,746,731</b>	<b>\$18,647,649</b>

## SECTION 4 -- Additional Detail

Table 5 summarizes conservation sectors by subset.

**Table 5 – Energy Conservation Summary by Sector**

	-- FYO1 --		-- FYO2 --		-- FYO3 --		-- FYO4 --		Cumulative Total	
	Savings Busbar (aMW)	Credit (\$)	Savings Busbar (aMW)	Credit (\$)	Savings Busbar (aMW)	Credit (\$)	Savings Busbar (aMW)	Credit (\$)	Savings Busbar (aMW)	Credit (\$)
<b>Residential</b>										
Appliances	0.146	\$356,833	0.529	\$1,198,475	1.072	\$2,483,462	0.928	\$3,154,542	2.675	\$7,193,312
Lighting	2.517	\$3,198,291	8.259	\$10,604,190	4.220	\$5,406,116	3.605	\$3,309,364	18.602	\$22,517,961
HVAC	0.182	\$509,396	1.641	\$4,456,512	1.658	\$4,574,382	1.156	\$3,805,311	4.637	\$13,345,601
Water Heating	0.093	\$177,528	0.265	\$496,365	0.192	\$343,127	0.144	\$357,255	0.694	\$1,374,275
Envelope - Existing	0.361	\$793,663	1.629	\$5,840,452	0.984	\$4,249,593	1.428	\$4,740,169	4.403	\$15,623,877
Envelope - New	0.239	\$976,308	0.175	\$710,934	0.243	\$973,724	0.243	\$996,613	0.899	\$3,657,579
<b>Residential Total</b>	<b>3.538</b>	<b>\$6,012,019</b>	<b>12.498</b>	<b>\$23,306,927</b>	<b>8.370</b>	<b>\$18,030,405</b>	<b>7.504</b>	<b>\$16,363,253</b>	<b>31.910</b>	<b>\$63,712,604</b>
<b>Commercial</b>										
Lighting	0.276	\$623,281	1.378	\$1,919,224	3.537	\$6,289,673	2.860	\$2,083,894	8.052	\$10,916,072
Water Heating	0.000	\$878	0.001	\$1,397	0.003	\$6,437	0.000	\$0	0.004	\$8,712
HVAC	0.000	\$0	0.262	\$521,246	0.232	\$629,420	0.274	\$1,636,765	0.767	\$2,787,431
Envelope - Existing	0.066	\$69,354	0.041	\$132,260	0.047	\$177,877	0.018	\$79,166	0.172	\$458,657
Equipment	0.000	\$0	0.000	\$0	0.000	\$0	0.002	\$2,933	0.002	\$2,933
Process Energy	0.000	\$0	0.054	\$131,377	0.054	\$82,801	0.002	\$5,257	0.110	\$219,435
Exit Signs	0.000	\$0	0.010	\$17,016	0.023	\$39,911	0.004	\$6,105	0.036	\$63,032
<b>Commercial Total</b>	<b>0.342</b>	<b>\$693,513</b>	<b>1.745</b>	<b>\$2,722,520</b>	<b>3.896</b>	<b>\$7,226,121</b>	<b>3.160</b>	<b>\$3,814,121</b>	<b>9.143</b>	<b>\$14,456,275</b>
<b>Industrial</b>										
Lighting	0.000	\$0	0.012	\$21,544	0.014	\$35,368	0.042	\$97,261	0.067	\$154,173
HVAC	0.000	\$0	0.000	\$0	0.012	\$37,995	0.000	\$0	0.012	\$37,995
Envelope - Existing	0.000	\$0	0.005	\$11,435	0.000	\$0	0.000	\$0	0.005	\$11,435
Motors	0.027	\$69,154	0.212	\$499,447	0.621	\$991,861	0.214	\$279,481	1.074	\$1,839,943
Process Energy	0.414	\$36,000	0.452	\$1,050,776	0.238	\$508,117	1.011	\$951,374	2.115	\$2,546,267
Compressed Air	0.000	\$0	0.000	\$0	0.546	\$944,002	0.176	\$254,941	0.722	\$1,198,943
<b>Industrial Total</b>	<b>0.442</b>	<b>\$105,154</b>	<b>0.680</b>	<b>\$1,583,202</b>	<b>1.431</b>	<b>\$2,517,343</b>	<b>1.443</b>	<b>\$1,583,057</b>	<b>3.995</b>	<b>\$5,788,756</b>
<b>Agricultural</b>										
Irrigation Hardware	0.261	\$315,912	0.319	\$421,110	0.288	\$368,486	0.200	\$240,897	1.069	\$1,346,405
Irrigation Water Management		\$966,625		\$328,448		\$250,000		\$229,812		\$1,774,885
Dairy Equipment & Systems	0.000	\$0	0.044	\$64,787	0.046	\$78,518	0.017	\$40,023	0.108	\$183,328
Freeze Resistant Stock Tanks	0.000	\$0	0.000	\$0	0.000	\$0	0.004	\$6,835	0.004	\$6,835
<b>Agricultural Total</b>	<b>0.261</b>	<b>\$1,282,537</b>	<b>0.363</b>	<b>\$814,345</b>	<b>0.334</b>	<b>\$697,004</b>	<b>0.222</b>	<b>\$517,567</b>	<b>1.181</b>	<b>\$3,311,453</b>
<b>Utility System</b>										
<b>Utility System Total</b>	<b>0.000</b>	<b>\$0</b>	<b>0.109</b>	<b>\$39,769</b>	<b>0.218</b>	<b>\$493,207</b>	<b>0.162</b>	<b>\$202,202</b>	<b>0.489</b>	<b>\$735,178</b>
<b>Other</b>										
Vending Machine Controls	0.000	\$310	0.122	\$133,765	0.061	\$66,030	0.002	\$2,325	0.186	\$202,430
LED Traffic Signals	0.000	\$0	0.021	\$60,304	0.125	\$359,497	0.048	\$139,287	0.194	\$559,088
Street Lighting	0.006	\$1,264	0.017	\$28,481	0.032	\$59,670	0.002	\$4,310	0.058	\$93,725
<b>Other Total</b>	<b>0.007</b>	<b>\$1,574</b>	<b>0.160</b>	<b>\$222,550</b>	<b>0.218</b>	<b>\$485,197</b>	<b>0.053</b>	<b>\$145,922</b>	<b>0.438</b>	<b>\$855,243</b>



**Table 6** shows that the majority of the credits received for conservation measures installed occurred in public utility service areas. **Table 7** summarizes Low-Income Weatherization activities. Claims by year, donations and measure specific have been combined.

**Table 6<sup>4</sup>**  
**Conservation Total By Utility Type**

	<b>Savings (AMWs)</b>	<b>Credit Claimed</b>
Public	38.03	\$ 75,413,408
Private	9.13	\$ 11,671,216
<b>Total</b>	<b>47.16</b>	<b>\$ 87,084.621</b>

**Table 7**  
**Low Income Weatherization Claims**

	<b>FY01</b>	<b>FY02</b>	<b>FY03</b>	<b>FY04</b>	<b>Total</b>
Washington	\$866,818	\$2,086,338	\$3,326,834	\$1,429,819	\$7,709,808
Oregon	\$55,056	\$866,133	\$467,075	\$506,745	\$1,895,010
Idaho	\$0	\$19,574	\$81,658	\$49,365	\$150,597
Montana & Nevada	\$0	\$5,000	\$45,000	\$0	\$50,000
PNGC	\$0	\$21,680	\$106,771	\$85,036	\$213,487
<b>Total</b>	<b>\$921,874</b>	<b>\$2,998,725</b>	<b>\$4,027,337</b>	<b>\$2,070,965</b>	<b>\$10,018,901</b>

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<sup>4</sup> Claimed amount shown in Tables 4 do not include administration claims or estimate of NEEA achievements.